SMTF Plan Overview

- SMTF EOI submitted Nov. 04; Fermilab director has encouraged us to submit proposal soon.
- We plan to submit the proposal to Fermilab in order to meet the FY06 budget schedule Feb. 1st 05.
- We are working to develop international collaboration.
- SMTF ILC plan is a phased approach (allows GDI input once it is formed).
- SMTF has a funding limited schedule

Phase 1: FY05(Oct. 04 – Oct. 05)

- Preparing Meson area with cryogenic, power …
- Install a single cavity from TESLA (Capture Cavity for Photo-injector) and commission at Meson (Cryostat at Fermilab)
- Build Chechia: Horizontal test stand for fully dressed cavity at full power. This is the vehicle for commissioning cryogenics (2 deg K), RF power, LLRF, controls etc. This also gets students and post-docs involved.
- Plan to form LLRF and Controls collaboration.
- Initiate fabrication of 4 TESLA design cavities in US
- TESLA Cryomodule Module design improvements are being discussed.
- Start building infrastructure (HPR, Clean room, tooling etc.) at Fermilab to construct an ILC cryomodule.

Phase 2: FY06(Oct. 05 – Oct. 06)

- Finish building infrastructure (HPR, Clean room, tooling etc.) at Fermilab to construct a ILC cryomodule.
- Build 1 (8 Cavities) 1.3 GHz cryomodule
- Cryomodule commissioned with cryogenic (2 deg K), RF Power, LLRF, controls etc.
- Moving Photo-injector from A0 to Meson is planned after the cryomodule is commissioned.
- Upgrade photo-injector

Motivation For SMTF-KEK Collaboration

- Due to limited funding and an ambitious schedule we recognize that it would be advantageous to help each other (SMTF and STF).
- Sharing infrastructure, design and resources will help start these projects as soon as possible and achieve our goals in a timely manner.
- SMTF would like to be working towards building a US-Japan cryomodule with 4 US and 4 Japan cavities to be tested at Fermilab with beam by the end of FY06.
- International teams from the three regions would participate in the commissioning and studies of this cryomodule.

Draft Proposal from KEK (1)

- In email correspondence from Takasaki-san, he proposed "contributing to SMTF by building up to 4 units of 9-cell L-band cavities at KEK to be assembled into a cryomodule at FNAL by your group."

- This is an excellent proposal and we would very much like to do this.

Draft Proposal from KEK (2)

- In email correspondence from Takasaki-san, he proposed "..would you be interested in initiating a formal collaboration channel for communicating numerous technical and engineering information…."

- Yes. We should discuss how you would like to proceed. Formal to us usually implies an joint MOU between institutions.

Additional Points For Discussion

- We would like to discuss additional points that would utilize US-Japan funds for the SCRF R&D.
  - We tried to think about this in a manner that helps both SMTF and STF.
  - Of course we have a better understanding of the SMTF plans.
- We will also present to you the SMTF/ Fermilab resources that could be applied to help STF in addition to US-Japan funds

Fully Dressed Cavities?

- Is it possible to use US-Japan funds for the additional components needed to dress the cavities?

- One possibility, since we have the designs, we could take responsibility for purchasing and processing, for both STF(4) and SMTF(4), input couplers, tuners, helium vessels etc. using US-Japan funds with US vendors.

SMTF Possible Contribution to STF?

- SMTF is building a high power modulator
  - We can build one for STF for only the cost of the parts-Fermilab would assume cost of design and assembly (this is equivalent to a ~$0.5 M contribution from Fermilab)
- SMTF is building a “Chechia” test stand
  - we can build one for STF for only the cost of the parts (equivalent to a ~$200K contribution)
- SMTF will order from industry a cold mass for the cryomodule once engineering is complete
  - we can obtain one for STF for cost of production only (equivalent to a ~$200K contribution)
- SMTF is beginning to form a collaboration to address LLRF and a control system
  - we would like to invite you to attend our meetings and work together
- If for example you were to be interested in all the above, it would represent >$1M in kind contribution to STF from Fermilab

Electro-Polishing (EP) & Source

- We would like to work together to develop EP at Fermilab
- We would be interested in collaborating with your experts on electron source topics such as polarization

Summary

- We are very excited to have the opportunity to collaborate with you
- We like your initial proposal to build 4 cavities for SMTF with US Japan funds to be installed in a US cryomodule
- We are pleased to develop a formal channel for communicating technical and engineering information with you
- We have proposed, open for discussion, a few additional items to be purchased using US-Japan funds for SMTF
- We propose a few projects that would allow Fermilab to contribute to STF
- We look forward to our collaboration and progress